



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,532	03/12/2007	Moon-Hi Han	95981	3551
24628 7590 03/28/2008 WELSH & KATZ, LTD 120 S RIVERSIDE PLAZA 22ND FLOOR CHICAGO, IL 60606				
EXAMINER				
LAM, ANN Y				
ART UNIT		PAPER NUMBER		
1641				
MAIL DATE		DELIVERY MODE		
03/28/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/566,532

**Applicant(s)**

HAN ET AL.

**Examiner**

ANN Y. LAM

**Art Unit**

1641

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 January 2006.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1 and 2 is/are rejected.  
7) ☒ Claim(s) 3 and 4 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 31 January 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO/S508)  
Paper No(s)/Mail Date 4/7/06, 5/18/06  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

The drawings are objected to because some of the figures, namely figures 2, 3, 5, 7 and 9, are not clear (the labeling, i.e., letters, numbers, are not clear and are difficult to discern.) Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

Claim 3 is objected to because of the following informalities: 'peptid' should be – peptide--. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kling et al., 7105508, in view of Kumar et al., 6218136.

As to claims 1 and 2, Kling et al. teach that integrin .alpha..sub.v.beta..sub.3 antagonists were identified and assessed by using an assay system based on competition between the natural integrin .alpha..sub.v.beta..sub.3 ligand vitronectin and the test substance for binding to solid phase-bound integrin .alpha..sub.v.beta..sub.3. Microtiter plates were coated with integrin .alpha..sub.v.beta. and contacted with vitronectin and anti-human vitronectin antibody coupled to peroxidase, washed with an assay buffer, and then peroxidase substrate was added and adsorption was measured. Concentration of the antagonist at which 50% of the ligand is displaced (col. 105, line 53 – col. 106, line 8.)

However, Kling et al. teach using peroxidase as the label rather than a fluorescent label.

Kumar et al. however teach that there are many ways to configure an assay to look for compounds which inhibit the binding of, in this particular case, MAPKAP kinase-3 to CSBP. Kumar et al. disclose that a common screening format uses a 96-well plate in which MAPKAP kinase-3 is initially attached to the wells of an ELISA plate. Subsequently a solution containing the putative inhibitor is added mixed with a solution containing CSBP. The bound CSBP in each well is then measured. Kumar et al. disclose that this is typically done by labeling the CSBP with a fluorescent label which can be detected directly, or by incubating with an additional reagent which detects the bound CSBP, such as an antibody specific for CSBP which has been fluorescently tagged or conjugated to an enzyme such as horseradish peroxidase, whose presence can be measured through an enzymatic reaction by providing a substrate which results in a color change. Kumar et al teach that these and other variations to ELISA plate assays are well known to those in the art. Typically, the amount of protein used in each step and the exact combination of reagents are determined empirically. Antagonist or inhibitor compounds which block the interaction of MAPKAP kinase-3 with CSBP are those which lead to a reduced signal. The assay can also be configured with the CSBP attached to the well, and the MAPKAP kinase-3 is added with candidate inhibitor compound as the second step followed by detection reagents as described above for CSBP. (col. 9, lines 12-49.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a fluorescent label as a substitute for the horseradish peroxidase label in the Kling et al. invention since this is a simple substitution of one known equivalent for another, as disclosed by Kumar et al. The 96-well plate is considered to be equivalent to a 'protein chip' since Applicant has not defined a chip or otherwise exclude such an interpretation. Alternatively, utilizing a chip is within the skills of the ordinary artisan as chips are known in the art for performing assays, as exemplified by Kumar et al.'s disclosure of another assay format using a chip (see col. 9, lines 59-63). As to a step of washing the chip with buffer solution after reacting and before measuring the degree of ligand binding, such washing step is typical in the art to remove non-bound or non-reacted materials including non-bound labeled materials in order to detect only those that are bound. Such a washing step is also exemplified by Kumar et al. as shown above (although using the peroxidase labeling technique.) The skilled artisan would recognize that such washing is necessary in a direct fluorescent assay to measure the degree of binding, as indicated by the detection of the bound fluorescent label.

***Allowable Subject Matter***

Claims 3 and 4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter. The peptides recited in claim 3 is interpreted to mean the peptide **consists of** SEQ ID NO:1, or SEQ ID NO:2, etc. The prior art does not disclose such peptides nor its use.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANN Y. LAM whose telephone number is (571)272-0822. The examiner can normally be reached on Mon.-Fri. 10-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on 571-272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1641

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ann Y. Lam/  
Primary Examiner, Art Unit 1641